

MAILED
11-5-09 44

Brian Schweitzer, Governor
Richard H. Opper, Director

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

November 5, 2009

Mr. Ben Sautter
City of Helena
316 N. Park Avenue
Helena, MT 59623

RE: **CLOSED CITY OF HELENA CLASS II LANDFILL – LEWIS AND CLARK COUNTY – LICENSE #90
DATA VALIDATION AND STATISTICAL EVALUATION OF JUNE 2009 GROUNDWATER QUALITY
DATA
ANNUAL GROUNDWATER EXTRACTION SYSTEM PERFORMANCE REPORT, OCTOBER 2009**

Dear Mr. Sautter:

The Department has reviewed the Data Validation and Statistical Evaluation of June 2009 Groundwater Quality Data and the Annual Groundwater Extraction System Performance Report for the closed City of Helena Class II Landfill in Lewis and Clark County, Montana. The groundwater monitoring report meets the requirements of Administrative Rule of Montana (ARM) 17.50.708. The Department provides the following comment for your consideration:

- Field parameters were not monitored during purging at the extraction wells, irrigation wells, and residential wells. While these wells are not monitoring wells and standard well purging procedures do not apply, field parameters should still be monitored for stabilization during purging to ensure a representative sample is collected.

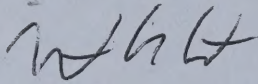
The Groundwater Extraction System Performance Report demonstrates that the contaminated water removed by the three extraction wells, HL-99-1, HL-99-2, and HL-99-3, is being treated to below the required limits prior to land application at the golf course.

As part of the Department's goal to lead by example in conserving resources, we will accept certain parts of groundwater monitoring reports in digital format on a CD or DVD included with the report. Content that may be submitted in digital format are: field data sheets, laboratory analytical and QA/QC reports, tables of historical chemical and water level data, and detailed results from statistical analyses (i.e. the output from statistics software packages). The closed City of Helena Landfill currently submits the detailed results of statistical analyses in digital format. Submittal of these materials in digital format is voluntary; you may choose which, if any, of the above listed items you wish to submit in digital format. However, the Department requests that the report text, figures, summary tables, and any time series plots of chemical and water level data continue to be submitted in paper format for inclusion in our files. If you have any questions regarding which materials the Department will accept in digital format, please contact me.

The Department notes the exceedance of the Tetrachloroethene (PCE) groundwater protection standard in off-site irrigation well I-4. The Department is concerned with the repeated groundwater protection standard exceedances in this well, as well as the apparent persistence of PCE concentrations in other off-site wells. A temporal trend plot of PCE concentrations in the regularly sampled residential and irrigation wells would be helpful in analyzing the off-site plume. Given the groundwater flow velocities in the area and the fact that the groundwater extraction system has been operating for nearly ten years, some improvement in groundwater quality in the down-gradient off-site wells should be expected. The apparent lack of improvement in water quality down-gradient of the facility may indicate that the seasonal operation of the groundwater extraction system is not achieving capture of the PCE plume.

The facility remains in corrective action with semi-annual monitoring at this time. If you have any questions or comments regarding this review, please contact me at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Section.

Sincerely,



Martin Van Oort
Environmental Science Specialist
Solid Waste Program
Phone: 406-444-2802, Fax: 406-444-1374
E-mail: mvanoort@mt.gov

File: Closed\Lewis and Clark Co.\City of Helena Class II Landfill\License #90\Groundwater Monitoring
Path: G:\WUT\SWS\GWater\Responses\Lewis & Clark Co\2009-06_cl_Helena_GW.doc
cc: Ms. Jodi Bingham, Hydrometrics, Inc., 3020 Bozeman Ave., Helena, MT 59601

Correspondence Slip

Project ID: _____

Requested: 11/3/09Needed By: 11/5/09Originator: MVD

Org(s)/Mail Code: _____

REVIEW
ROUTING

Name

Task

Initial/Date

AdminProofJH 11-3Mux 11ReviewChh 11-4DorrellReviewHas 11/4RockReviewRT 11-4-09

Mail original via:

☒ Regular ☐ Certified ☐ Registered ☐ FedEx

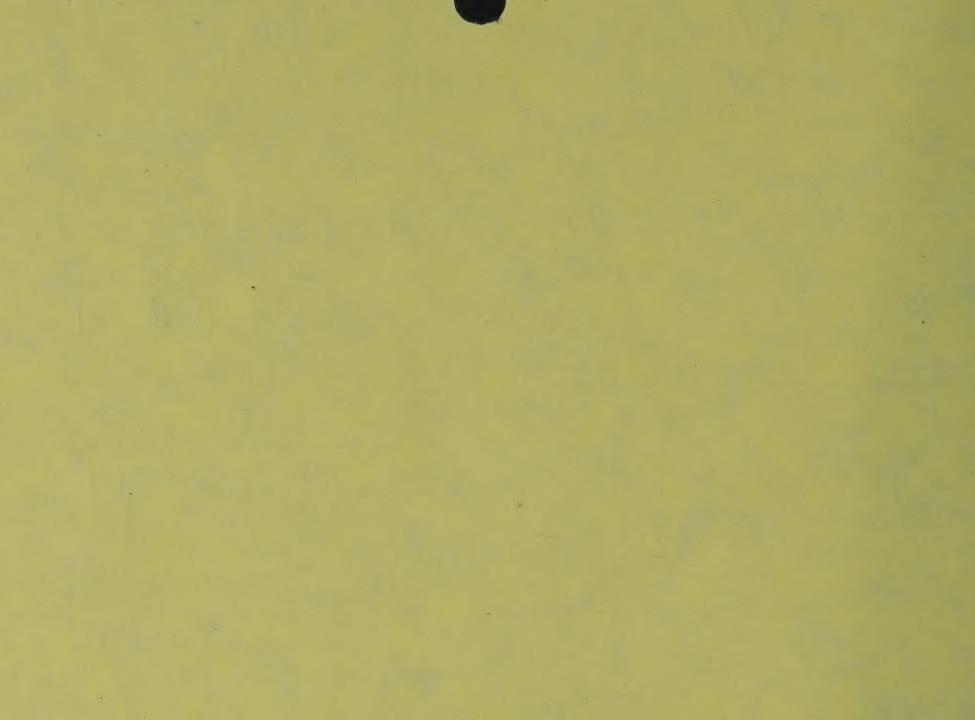
Fax to addressee at: _____

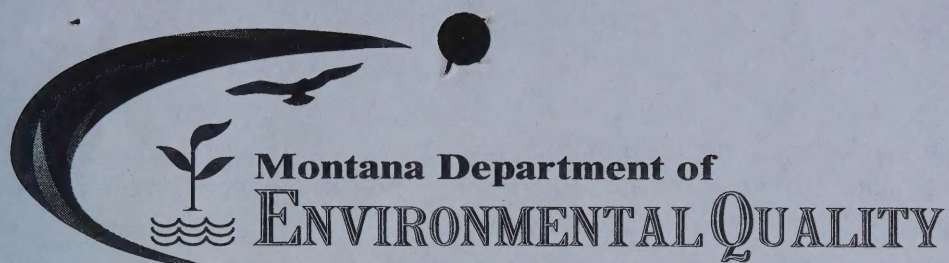
Proof Path: G:\WUT\

see letterMail copy of enclosures
to CC's? Y ☒ N

Special Instructions:

Copies of enclosures
for file needed? Y ☒ NCopy of letter for file
needed? Y ☒ N





Brian Schweitzer, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

April 17, 2009

Mr. Ben Sautter
City of Helena
City/County Building
316 N. Park Avenue
Helena, MT 59623

RE: **CLOSED CITY OF HELENA CLASS II LANDFILL – LEWIS AND CLARK COUNTY – LICENSE #90**
DATA VALIDATION AND STATISTICAL EVALUATION OF DECEMBER 2008 GROUNDWATER
QUALITY DATA

Dear Mr. Sautter:

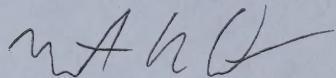
The Department has reviewed the Data Validation and Statistical Evaluation of December 2008 Groundwater Quality Data for the closed City of Helena Class II Landfill in Lewis and Clark County, MT. The report meets the requirements of Administrative Rule of Montana (ARM) 17.50.708. The Department provides the following comments for your consideration:

- The results from a matrix spike and matrix spike duplicate analysis performed on the sample from HL-99-3 for Cyanide exhibited recoveries of 87 and 84%, which are outside the laboratory control limits. Cyanide was detected in the associated sample HL-0812-106 (HL-99-3) at a concentration of 0.031 mg/l. This result may be biased low.
- When conducting statistical analyses for pH and Specific Conductance, the laboratory measured values should be used instead of the field measured values.
- Please include the results of the normality tests on the CD for both original and log transformed data when the background dataset is found to be non-normal.
- The Mann-Kendall test for trend only needs to be performed for down gradient exceedances of background.
- When performing the Mann-Kendall test for trend, non-detect values should be set to zero. This will prevent the detection of false trends when parameters are detected at concentrations less than the reporting limit, or when the reporting limits have changed over time.

The Department notes the decrease in tetrachloroethene concentrations in Residential Well #5. A temporal trend plot of tetrachloroethene concentrations in the regularly sampled residential wells would be helpful in analyzing the off-site plume. The Department also notes the increase in tetrachloroethene concentrations in compliance well HL-90-1 to greater than the groundwater protection standard. This appears to be part of a seasonal trend of higher concentrations in the winter than in the summer, which is most evident in HL-99-2 and HL-99-3. These trends should be closely monitored to ensure that the corrective measures are making progress towards the goal of reducing tetrachloroethene concentrations in the compliance well to below groundwater protection standards year round.

The facility remains in corrective action with semi-annual monitoring at this time. If you have any questions or comments, please do not hesitate to contact me at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Program.

Sincerely,



Martin Van Oort
Environmental Science Specialist
Solid Waste Program
Phone: 406-444-2802, Fax: 406-444-1374
E-mail: mvanoort@mt.gov

File: Closed\Lewis and Clark County\City of Helena Landfill\License #90\Groundwater Monitoring
Path: G:\WUT\SWS\GWater\Responses\Lewis & Clark Co\2008-12_cl_Helena_GW.doc
cc: Ms. Jodi Bingham, Hydrometrics, Inc., 3020 Bozeman Ave., Helena, MT 59601

Correspondence Slip

Project ID: _____

Requested: 4/15/09

Needed By: 4/17/09

Originator: MVD

Org(s)/Mail Code: _____

REVIEW
ROUTING

Name

Task

Initial/Date

Admin

Proof

4/14-15-09

Mary H

Review

Chen 4-14

Darrell

Review

glas 4/16

Rick

Review

RT 4-17-2009

Mail original via:

☒ Regular ☐ Certified ☐ Registered ☐ FedEx

Fax to addressee at

Proof Path: G:\WUT\

See letter

Special Instructions:

Mail copy of enclosures
to CC's? Y ☒ N

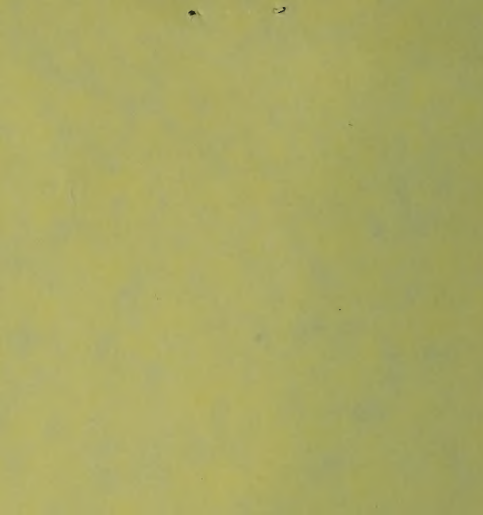
Copies of enclosures
for file needed? Y ☒ N

Copy of letter for file
needed? ☒ Y N



Closed

County Lewis & Clark
Facility & # City of Helena #90
Closure Landfarm
Finan Assur Liner
GW Corr Meas Methane
GW Monitoring O & M
GW Reports Run-on
Inspections
Other: _____





Hydrometrics, Inc.
consulting scientists and engineers

RECEIVED

NOV 25 2009

DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
MANAGEMENT BUREAU

3020 Bozeman Avenue
Helena, MT 59601
(406) 443-4150
Fax: (406) 443-4155
www.hydrometrics.com

November 24, 2009

Mr. Martin Van Oort
Environmental Science Specialist
Solid Waste Regulatory Program
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Dear Martin,

Enclosed for your review are the proposed monitoring sites and analytical schedule for the December 2009 semiannual groundwater monitoring at the Helena Landfill. Water level measurements will be obtained from several additional monitoring wells to ensure an accurate potentiometric surface map can be established. This sampling regime is as listed in the approved Revised Sampling and Analysis Plan, City of Helena Landfill, Groundwater, Surface Water, and Landfill Gas Monitoring Activities (Hydrometrics, 2008). Sampling personnel will be attempting to sample the week of December 7, 2009. Please call if you have any questions or comments.

Sincerely,

Jodi Bingham, P.E.
Environmental Engineer/Chemist

c: John Rundquist, City of Helena
Ben Sautter, City of Helena
Mike Wignot, Hydrometrics

**HELENA LANDFILL
DECEMBER 2009 SAMPLE SITE AND PARAMETER LIST**

Site Name	Parameter
Monitoring Wells ⁽¹⁾	
INF. GALLERY	Water level only
MPC-2	Water level only
HL-90-2	Water level only
HL-94-1	Table 1
HL-94-3	Water level only
HL-06-1	Table 1
HL-90-3	Water level only
HL-94-2	Water level only
I-1	Water level only
HL-99-1	Table 1
HL-99-2	Table 1
HL-90-1	Table 1
HL-99-3	Table 1
MPC-1	Water level only
I-4	Water level only
EPA-1	Water level only
MPC-5	Table 1
Residential Wells:	
5	Table 1 VOC's only
16	Table 1 VOC's only
Quality Control:	
Duplicate (HL-90-1)	Table 1
Trip Blank	Table 1
Rinsate Blank	Table 1

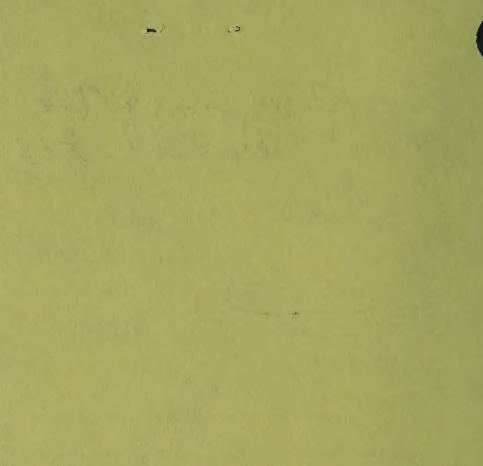
(1) Monitoring wells are listed in the order to be sampled.

RECEIVED

NOV 25 2009

Dept. of Enviro. Quality
Waste & Underground
Tank Management Bureau

County Closed Lewis & Clark
Facility & # City of Helena #90
Closure Landfarm
Finan Assur Liner
GW Corr Meas Methane
GW Monitoring O & M
GW Reports Run-on
Inspections
Other: _____





Hydrometrics, Inc.

consulting scientists and engineers

3020 Bozeman Avenue
Helena, MT 59601
(406) 443-4150
Fax: (406) 443-4155
www.hydrometrics.com

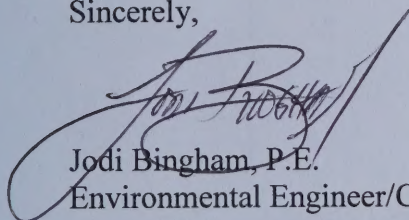
May 28, 2009

Mr. Martin Van Oort
Environmental Science Specialist
Solid Waste Regulatory Program
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Dear Martin,

Enclosed for your review are the proposed monitoring sites and analytical schedule for the June 2009 semiannual groundwater monitoring at the Helena Landfill. Water level measurements will be obtained from several additional monitoring wells to ensure an accurate potentiometric surface map can be established. This sampling regime is as listed in the approved Revised Sampling and Analysis Plan, City of Helena Landfill, Groundwater, Surface Water, and Landfill Gas Monitoring Activities (Hydrometrics, 2008). Sampling personnel will be attempting to sample the week of June 8, 2009. Please call if you have any questions or comments.

Sincerely,



Jodi Bingham, P.E.
Environmental Engineer/Chemist

c: John Rundquist, City of Helena
Ben Sautter, City of Helena
Mike Wignot, Hydrometrics

RECEIVED

MAY 29 2009

Dept. of Enviro. Quality
Waste & Underground
Tank Management Bureau

STATE OF NEW YORK
IN SENATE
January 12, 1906.

REPORT
OF THE
COMMISSIONER OF THE LAND OFFICE
IN RESPONSE TO A RESOLUTION PASSED BY THE SENATE
JANUARY 10, 1905.

LANDS BELONGING TO THE STATE.	LANDS BELONGING TO THE PEOPLE.
1. Lands reserved for the State.	2. Lands reserved for the people.
3. Lands reserved for the State.	4. Lands reserved for the people.
5. Lands reserved for the State.	6. Lands reserved for the people.

HELENA LANDFILL
JUNE 2009 SAMPLE SITE AND PARAMETER LIST

Site Name	Parameter
Monitoring Wells ⁽¹⁾	
INF. GALLERY	Table 1 VOC's only
MPC-2	Table 1 VOC's only
HL-90-2	Table 1
HL-94-1	Table 1
HL-94-3	Table 1
HL-06-1	Table 1
HL-90-3	Table 1
HL-94-2	Table 1
I-1	Water Level Only
HL-99-1	Table 1
HL-99-2	Table 1
HL-90-1	Table 1
HL-99-3	Table 1
MPC-1	Table 1
I-4	Table 1 VOC's only
EPA-1	Table 1
MPC-5	Table 1
Residential Wells:	
5	Table 1 VOC's only
16	Table 1 VOC's only
40	Table 1 VOC's only
48	Table 1 VOC's only
52	Table 1 VOC's only
57	Table 1 VOC's only
62	Table 1 VOC's only
90	Table 1 VOC's only
Quality Control:	
Duplicate (HL-90-1)	Table 1
Trip Blank	Table 1
Rinsate Blank	Table 1

(1) Monitoring wells are listed in the order to be sampled.

